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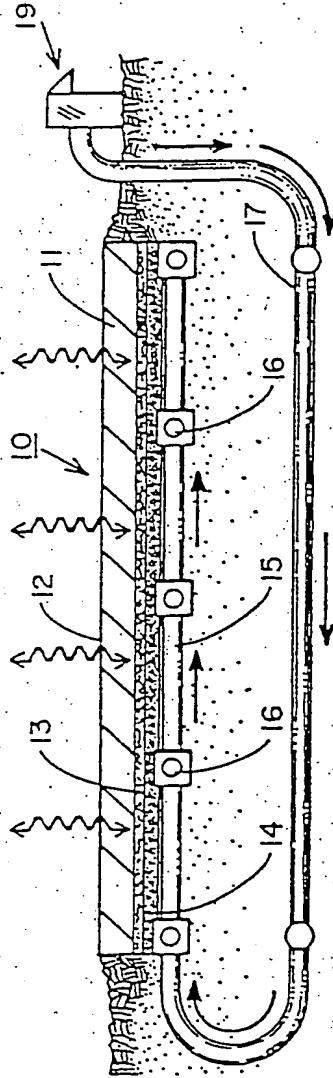


FIG. 1

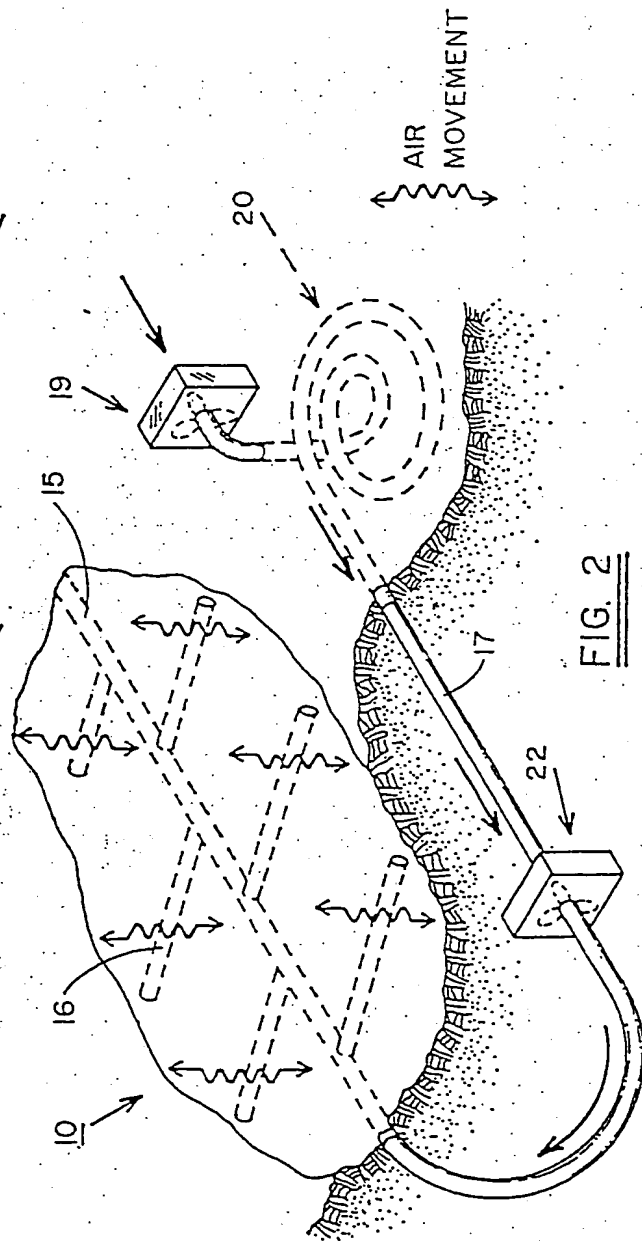
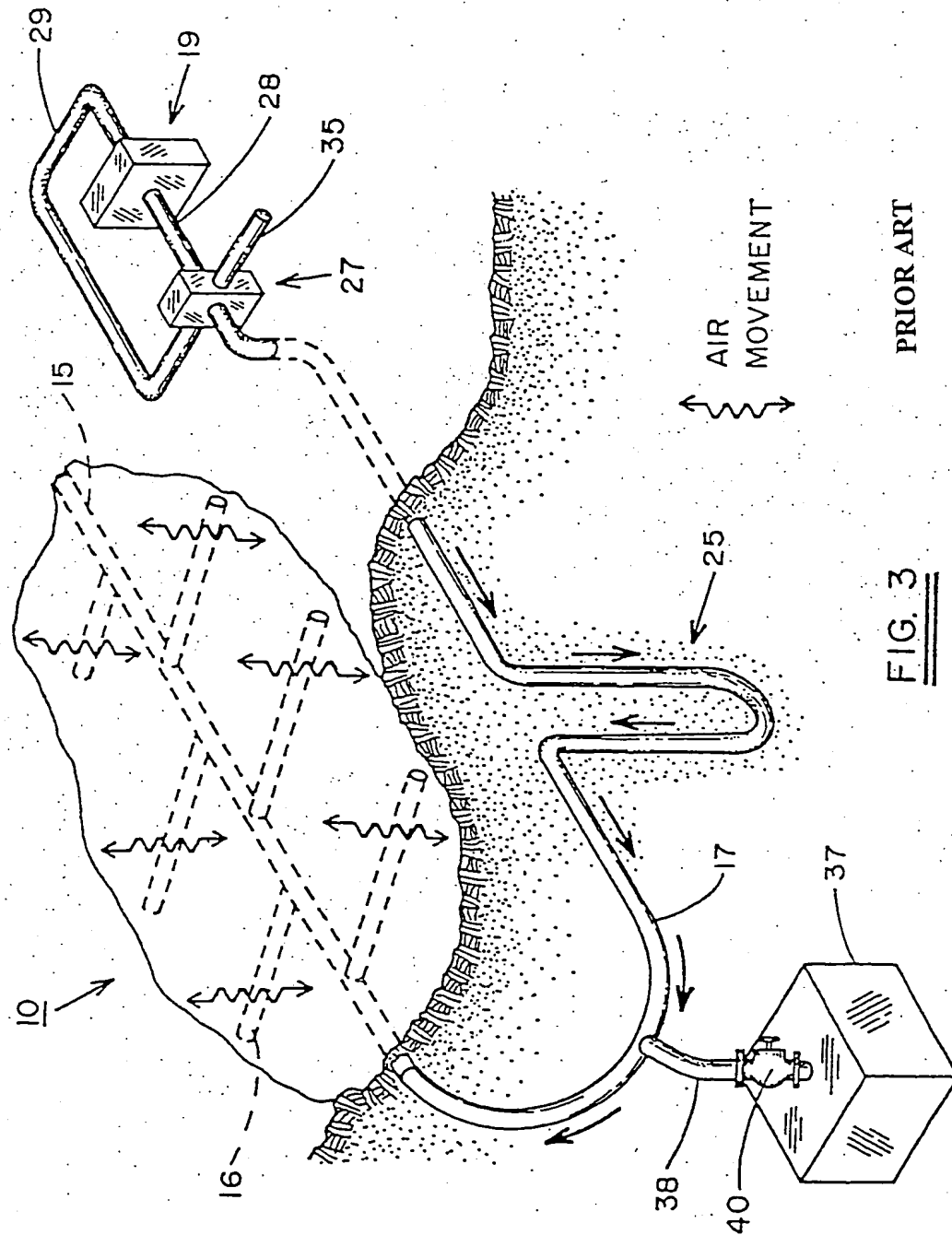


FIG. 2

PRIOR ART



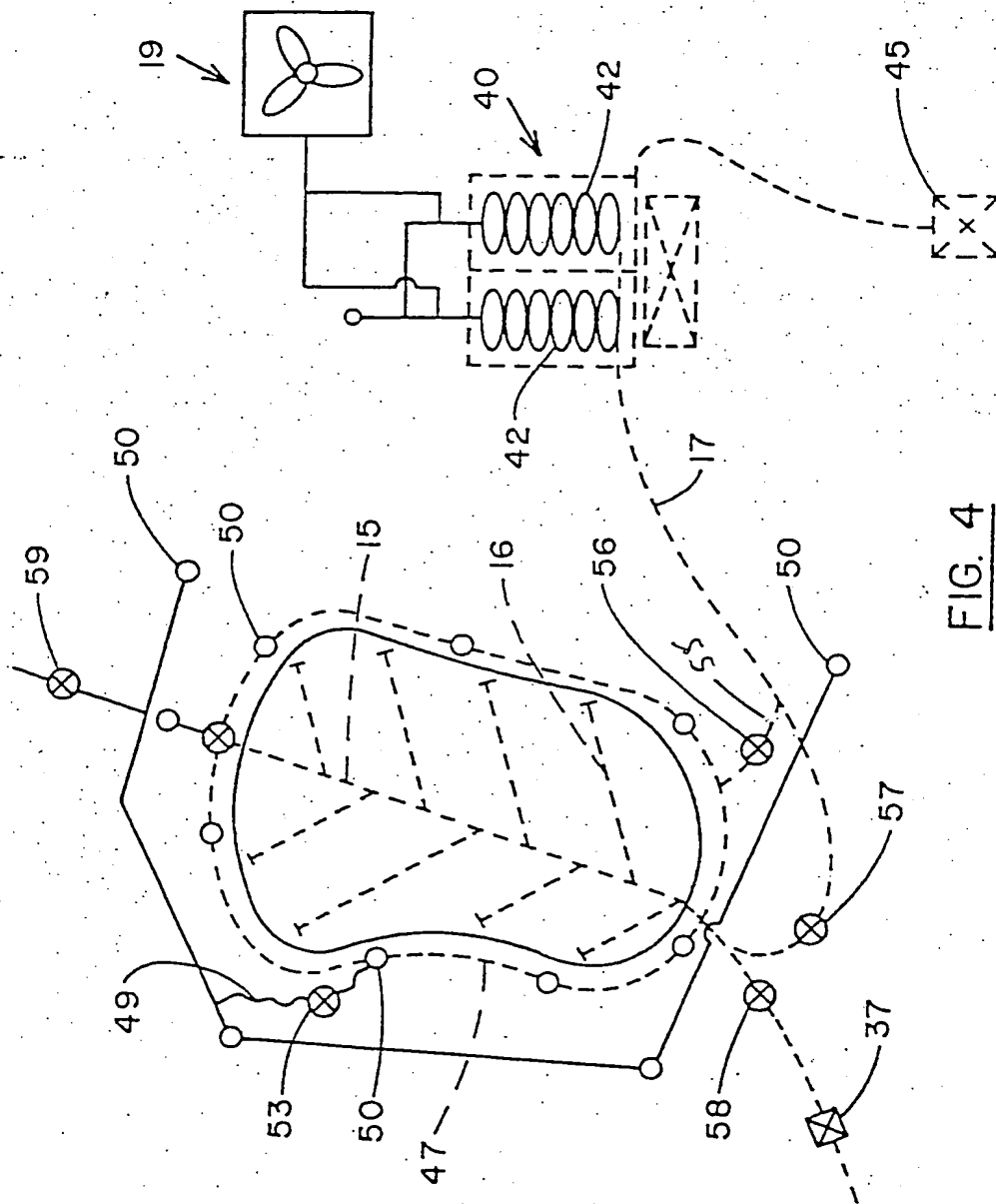


FIG. 4

PRIOR ART

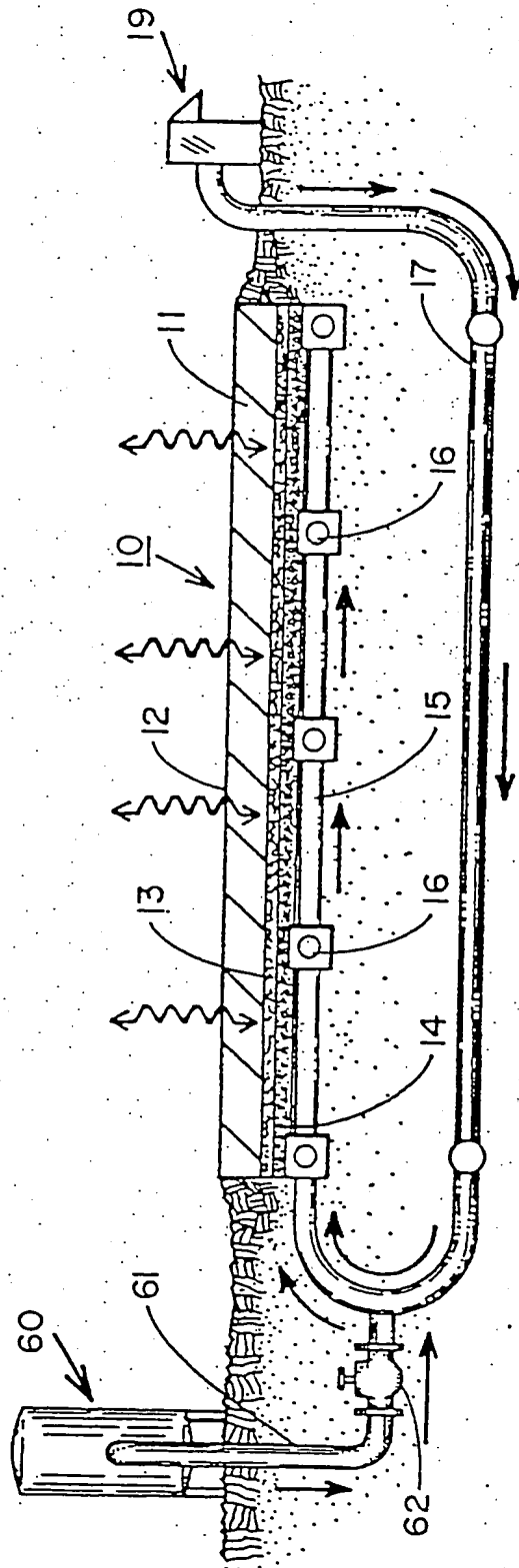
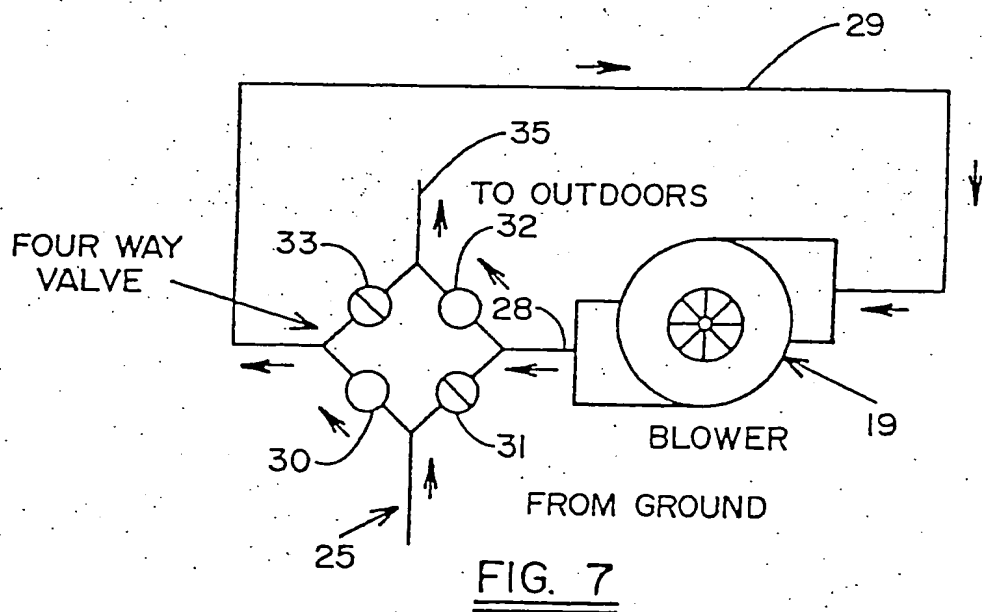
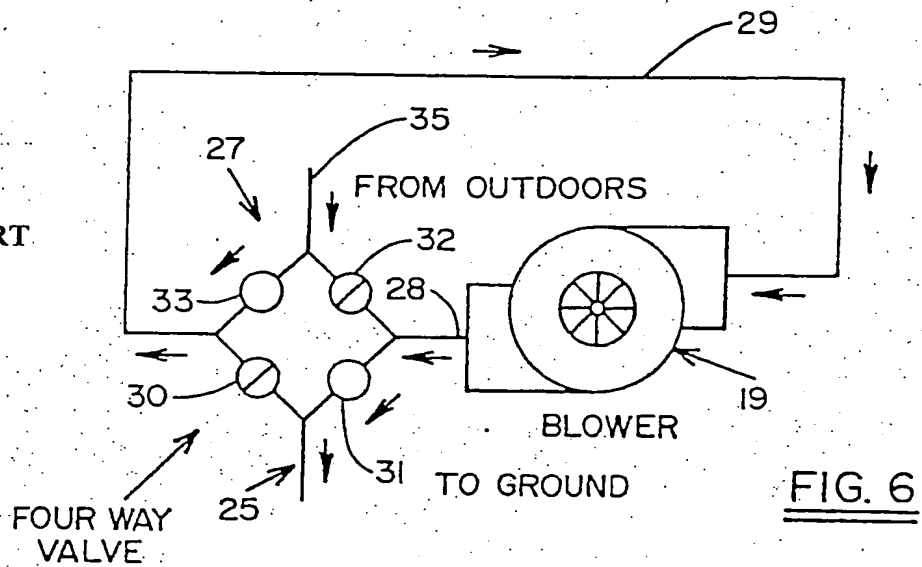
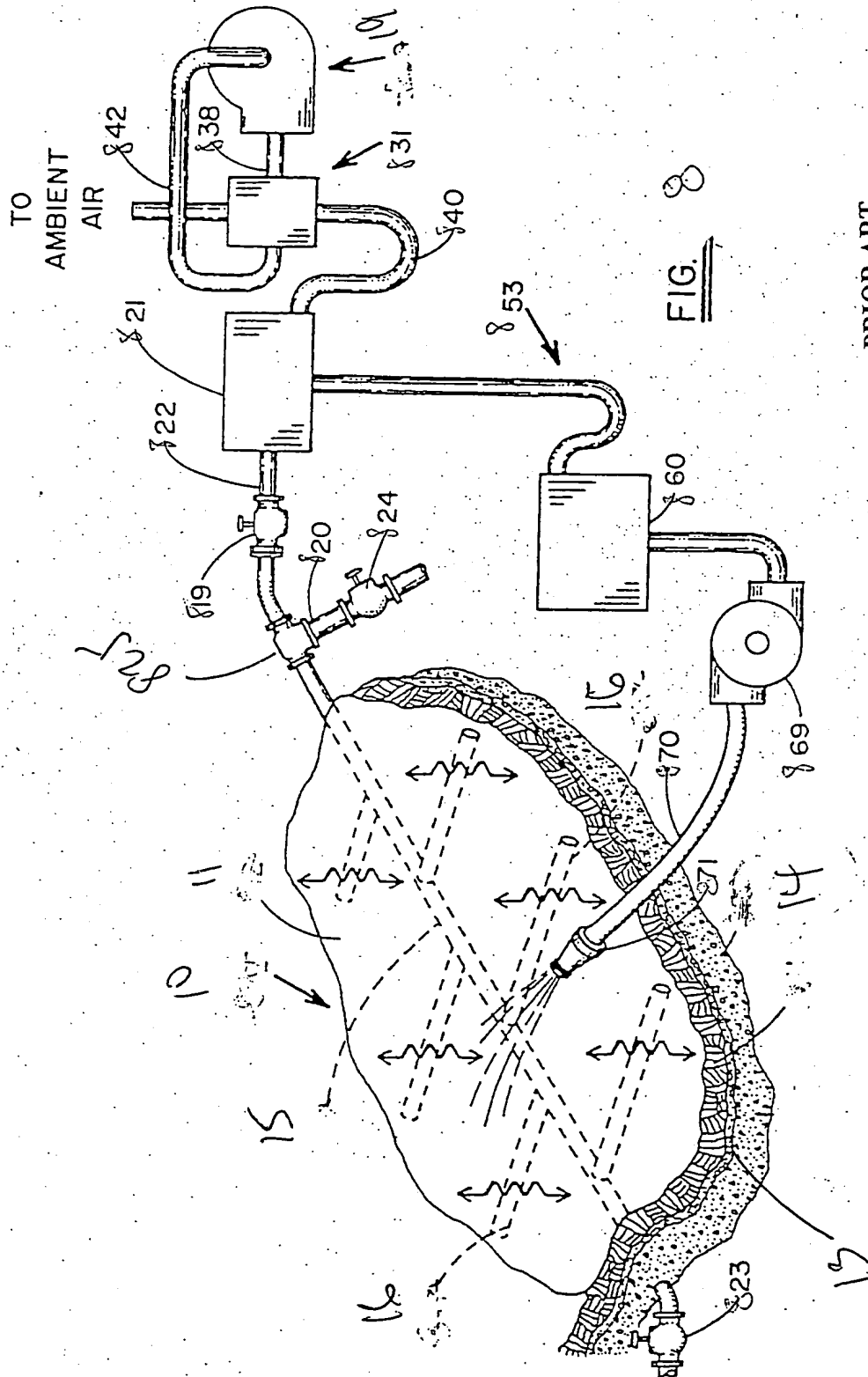


FIG. 5

PRIOR ART

PRIOR ART





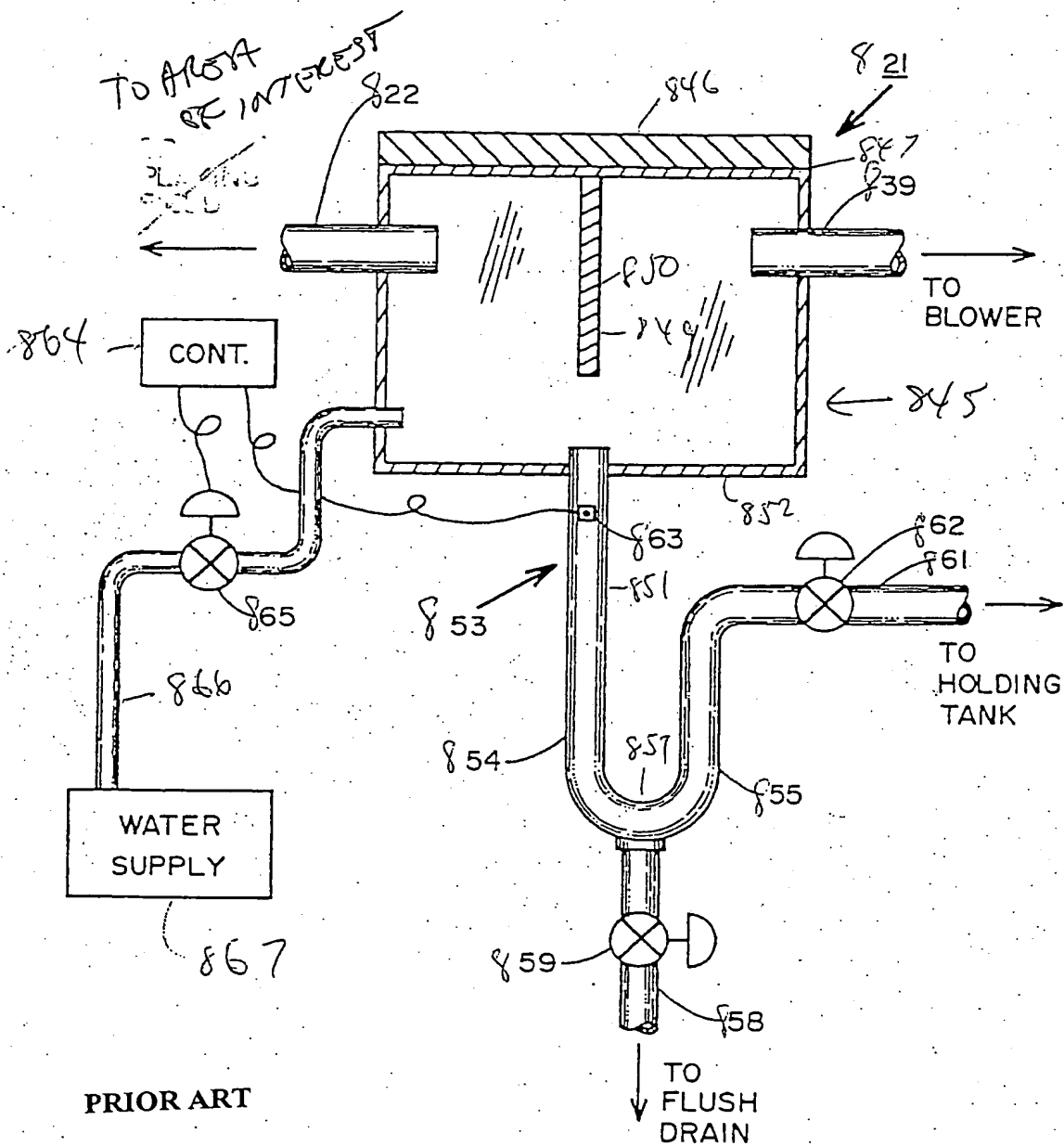
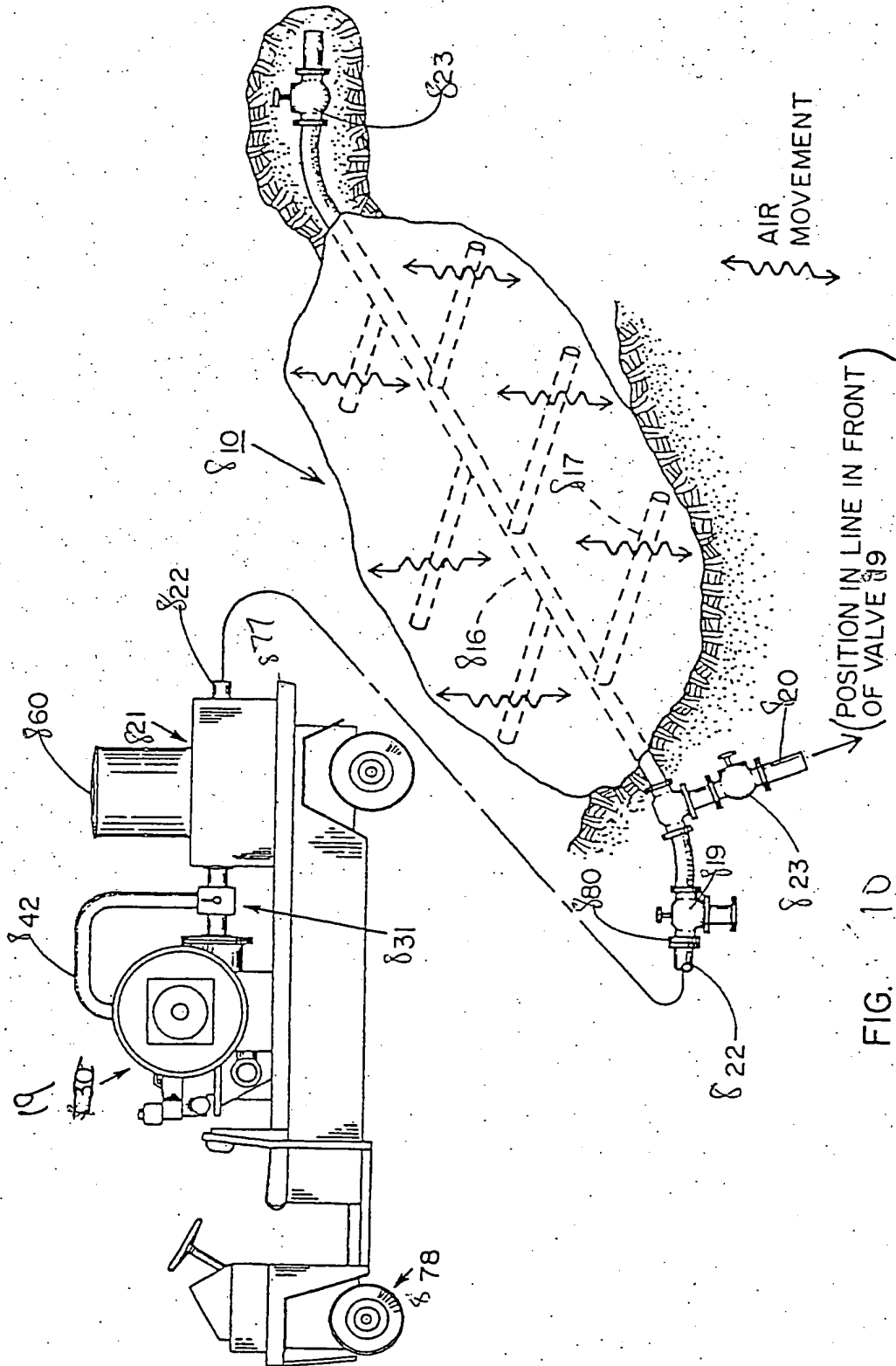
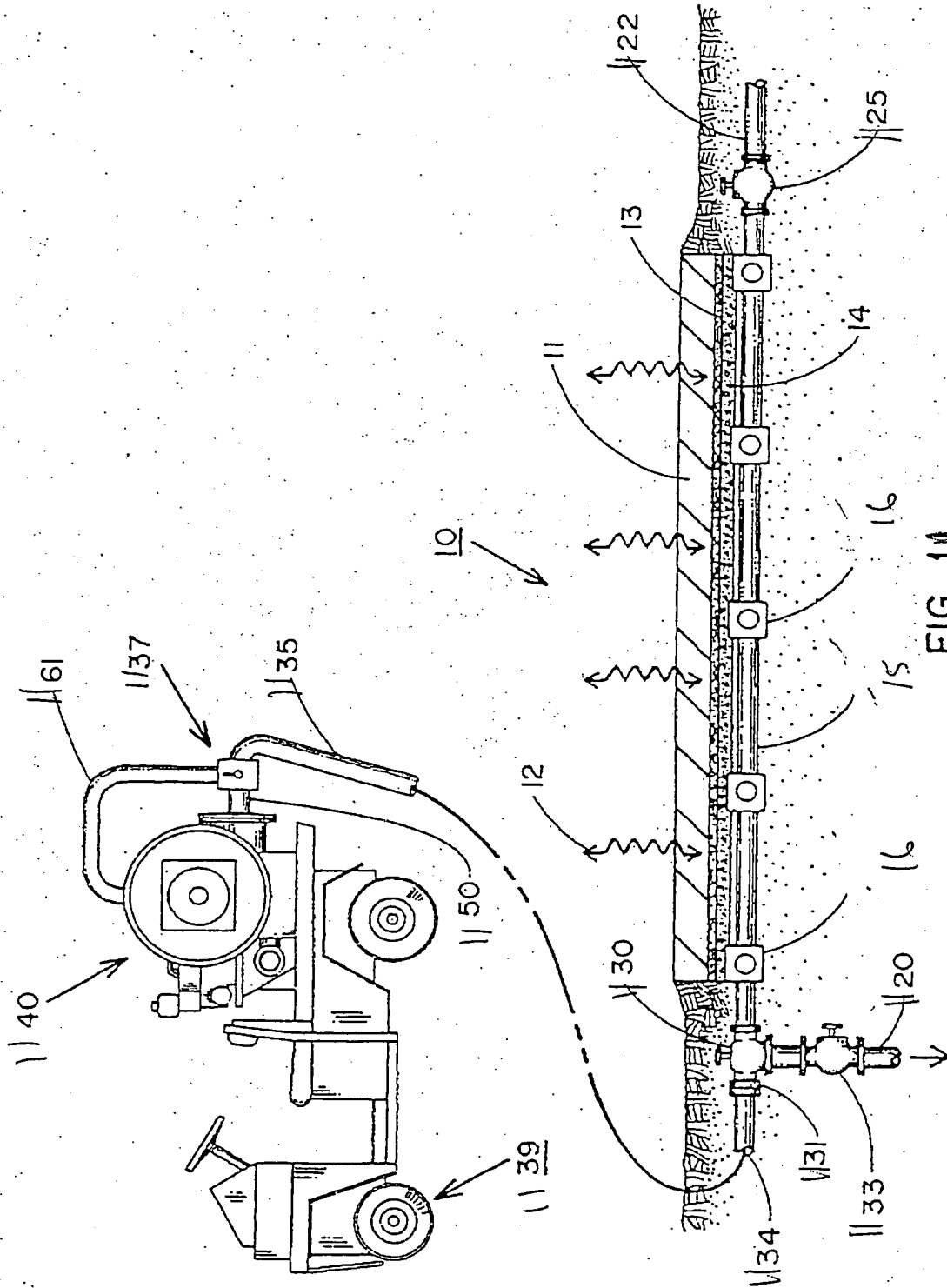


FIG. 9

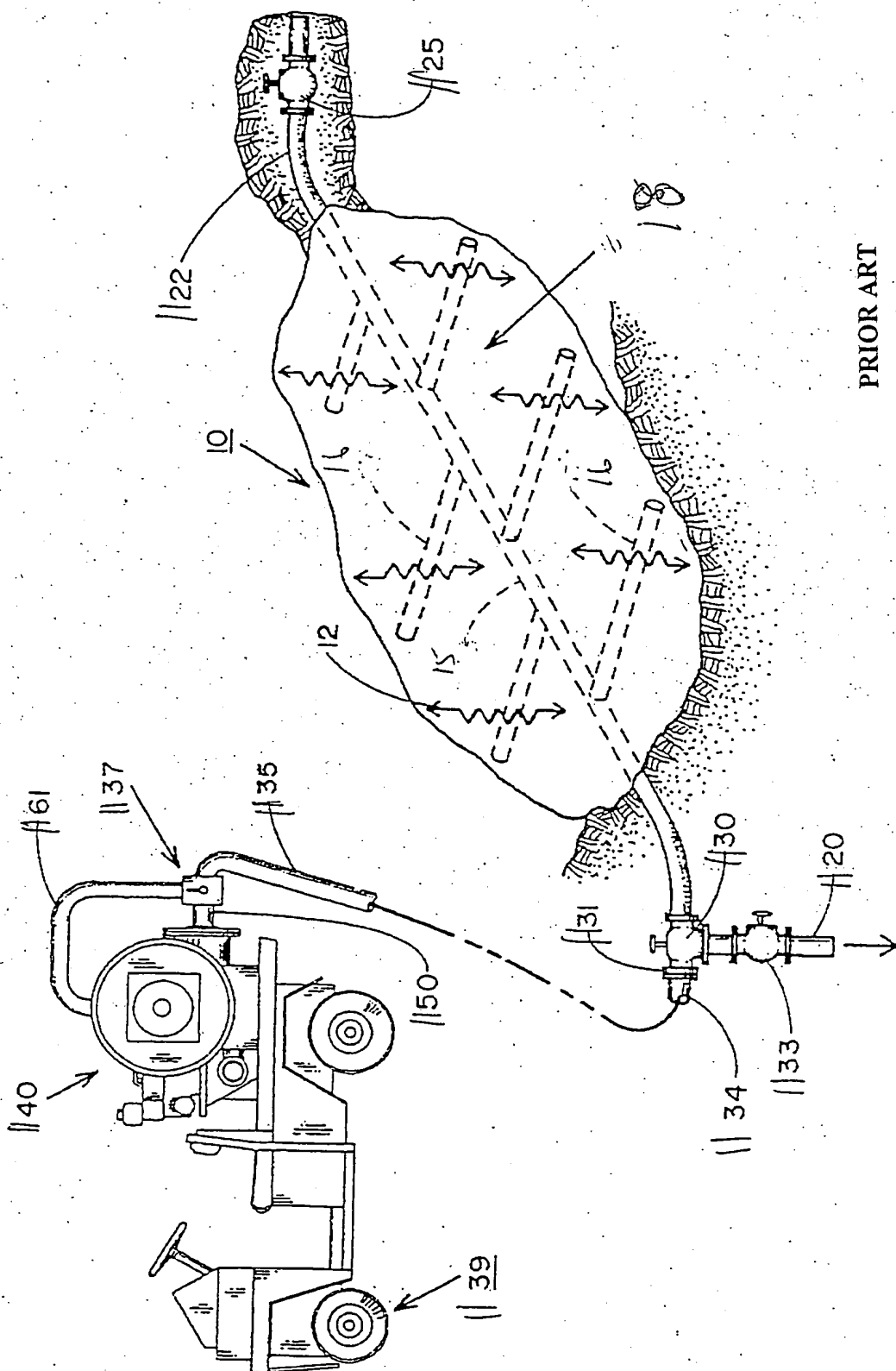


PRIOR ART



PRIOR ART

FIG. 1A



PRIOR ART

FIG. 12



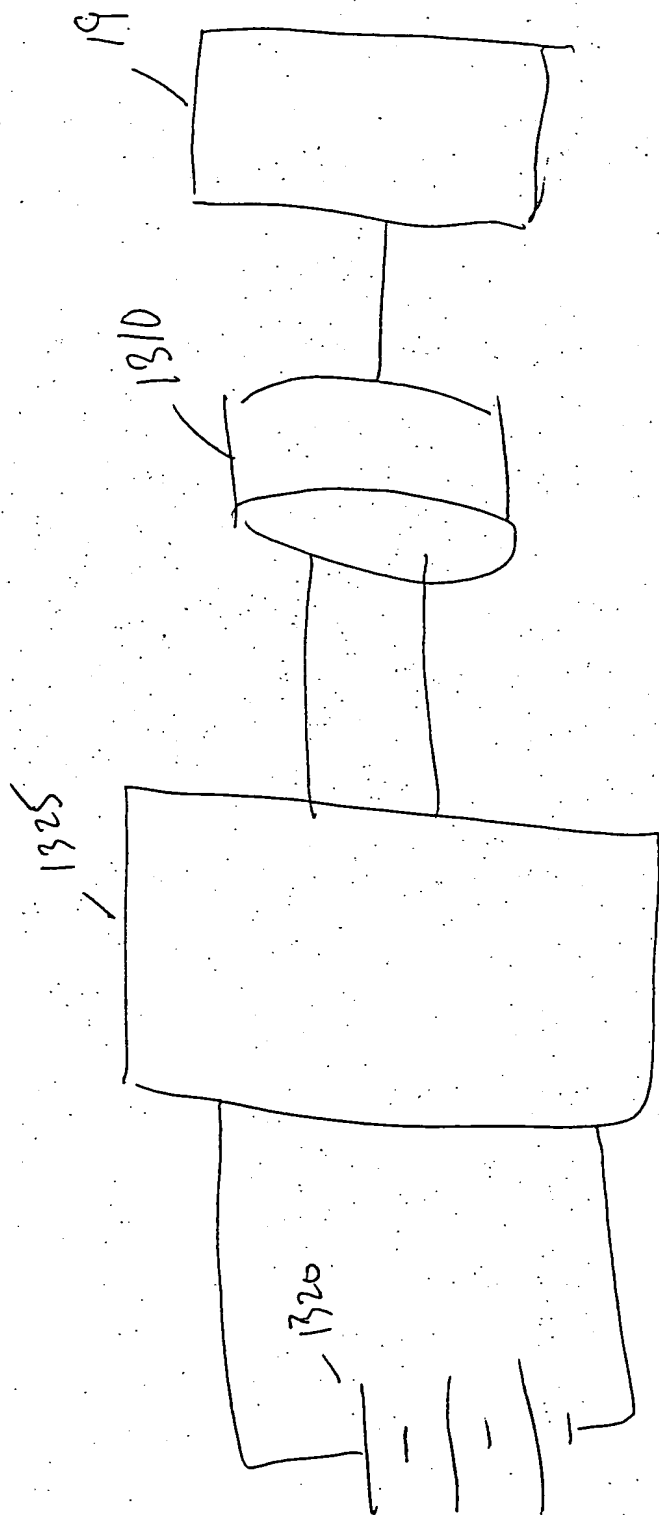


FIG. 13A

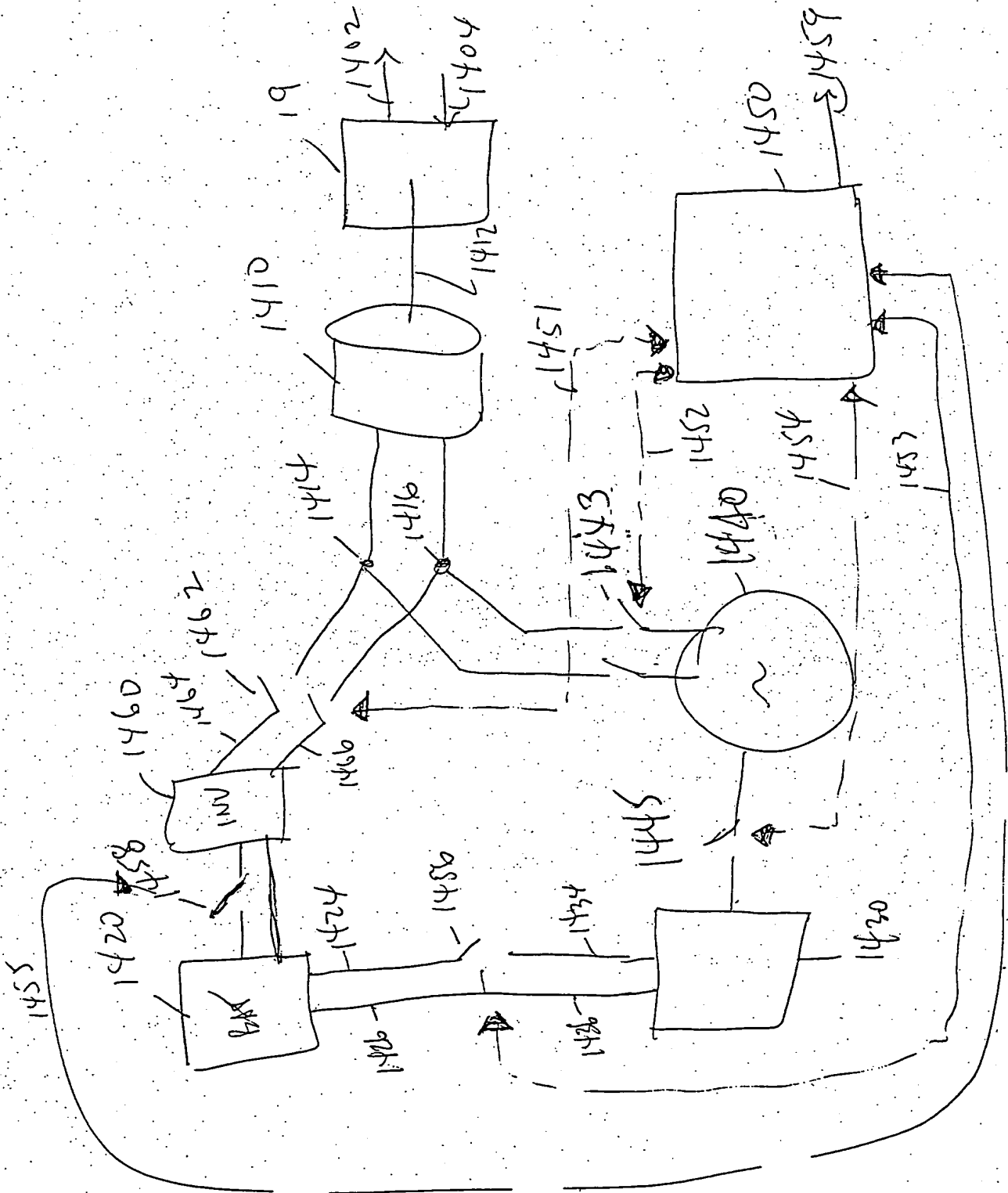


Fig. 14

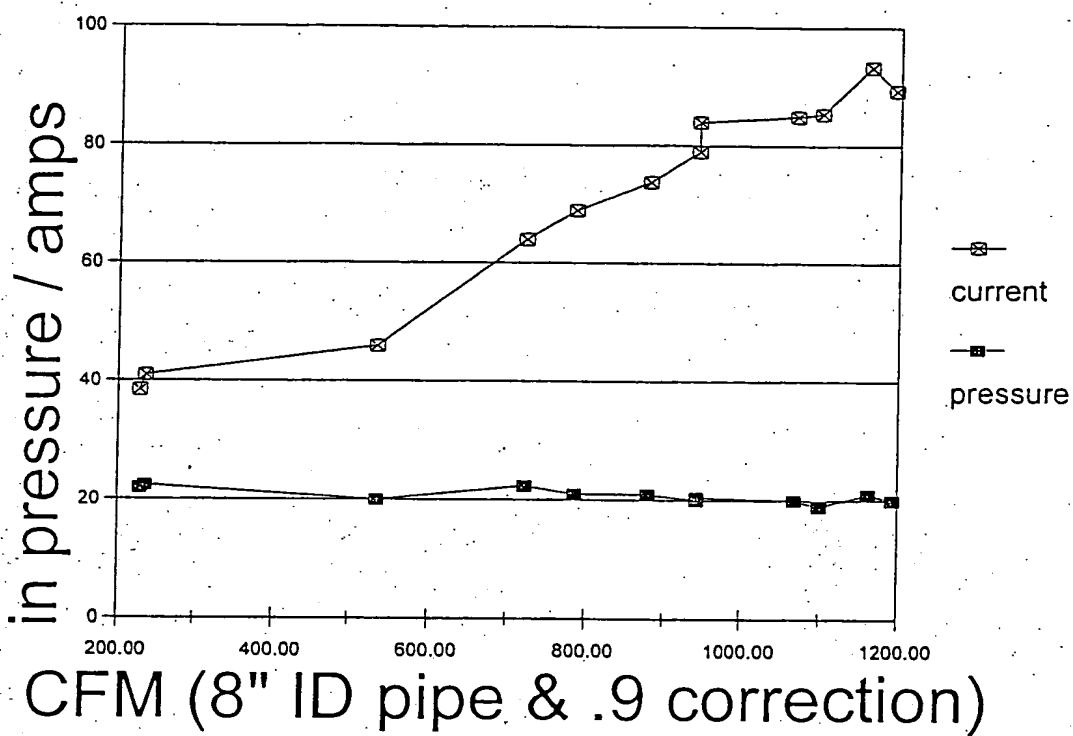


Fig. 15

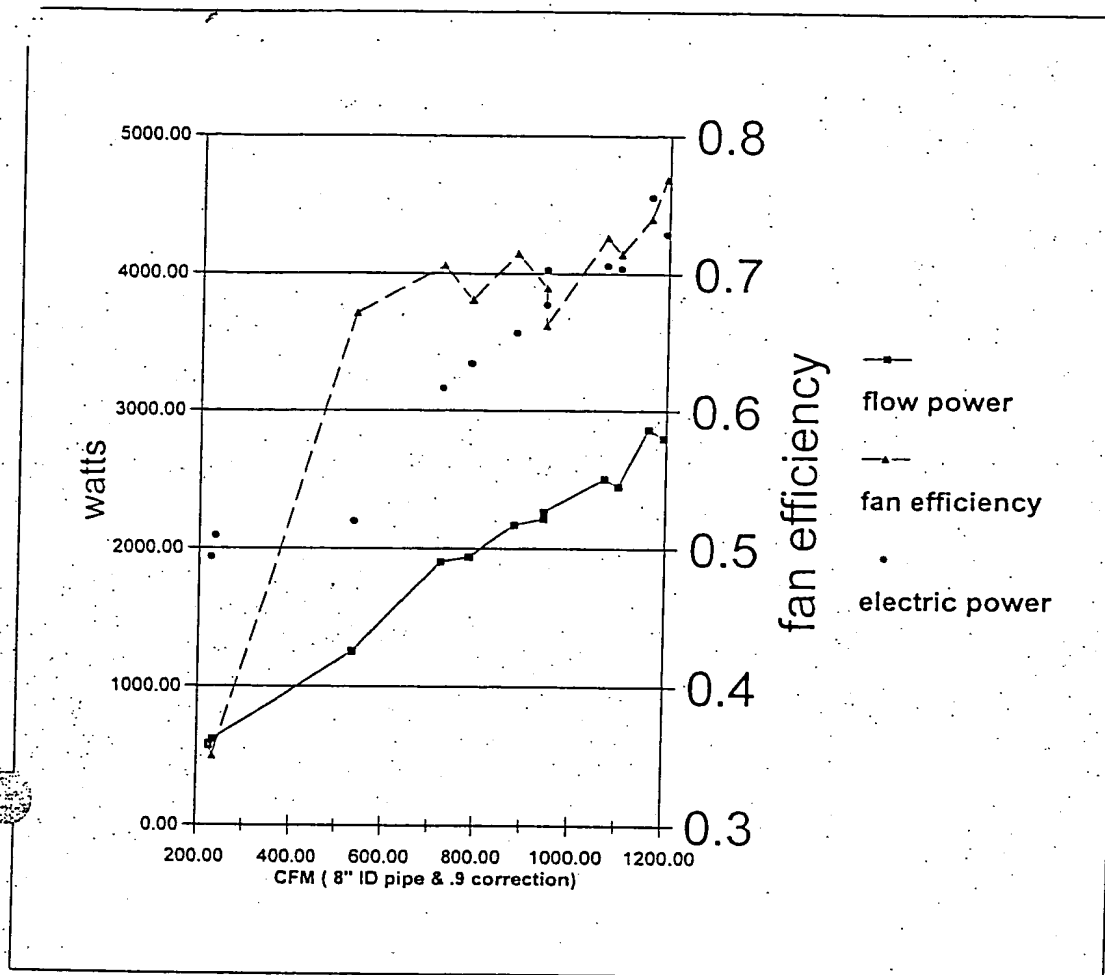


Fig. 16

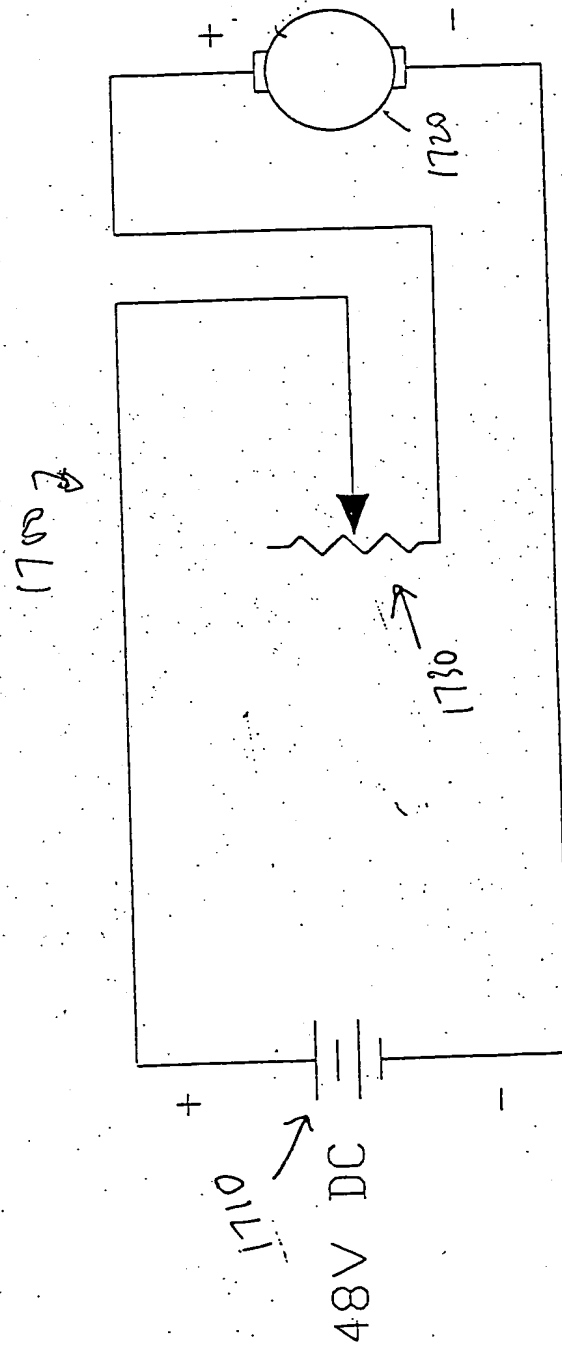


Fig. 17

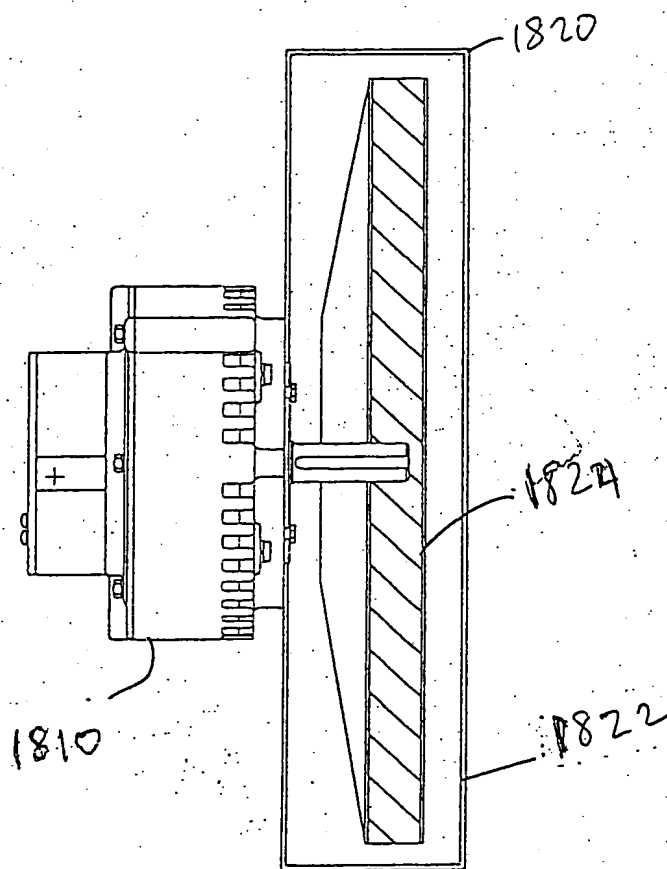
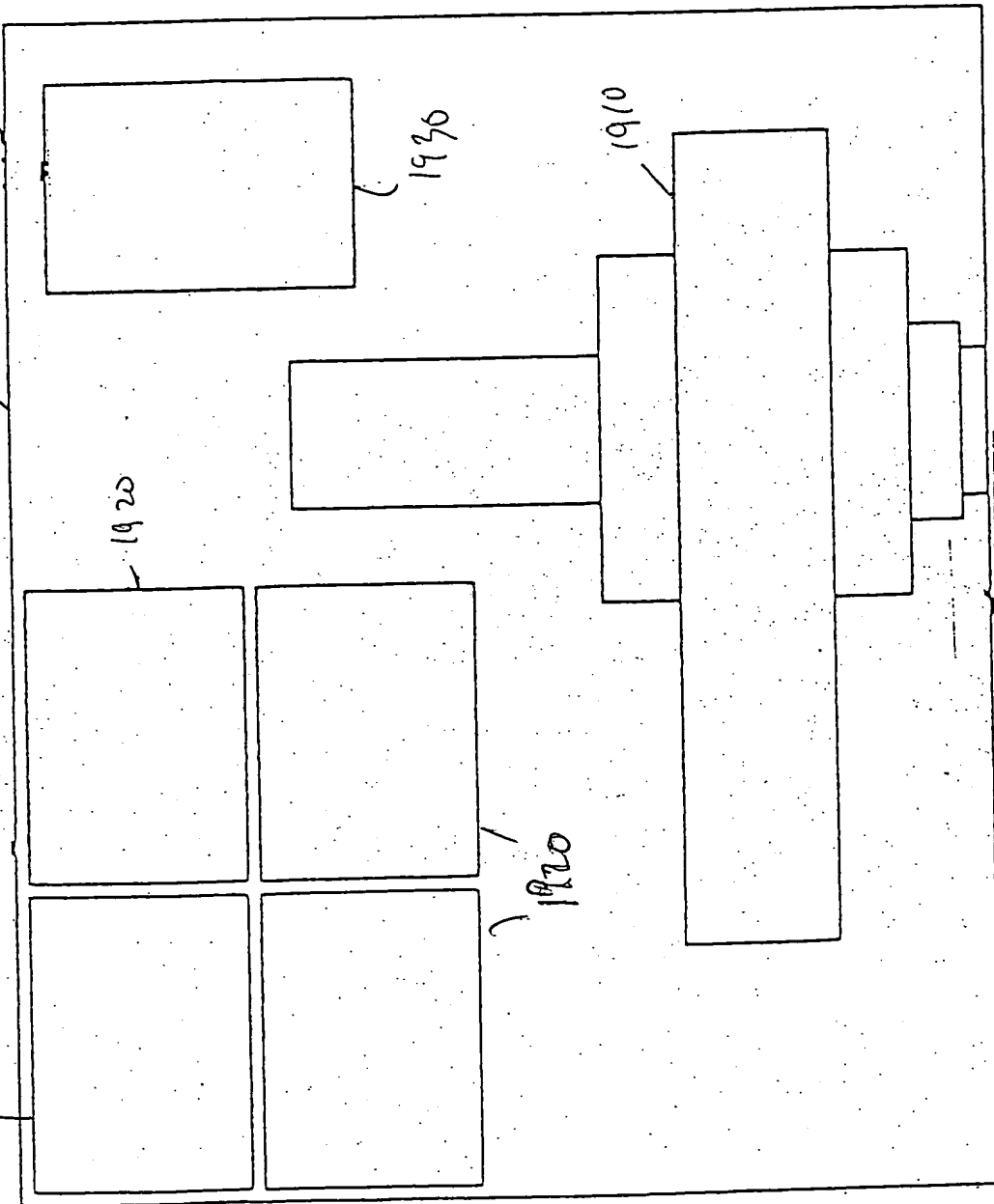


Fig. 18

1940



19

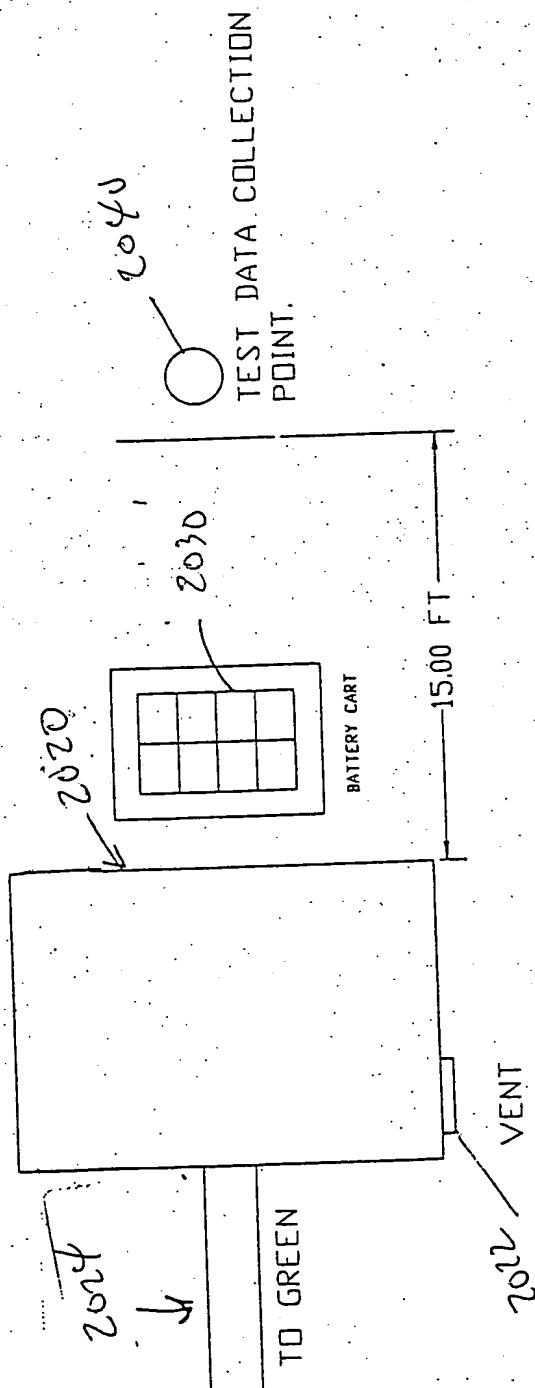
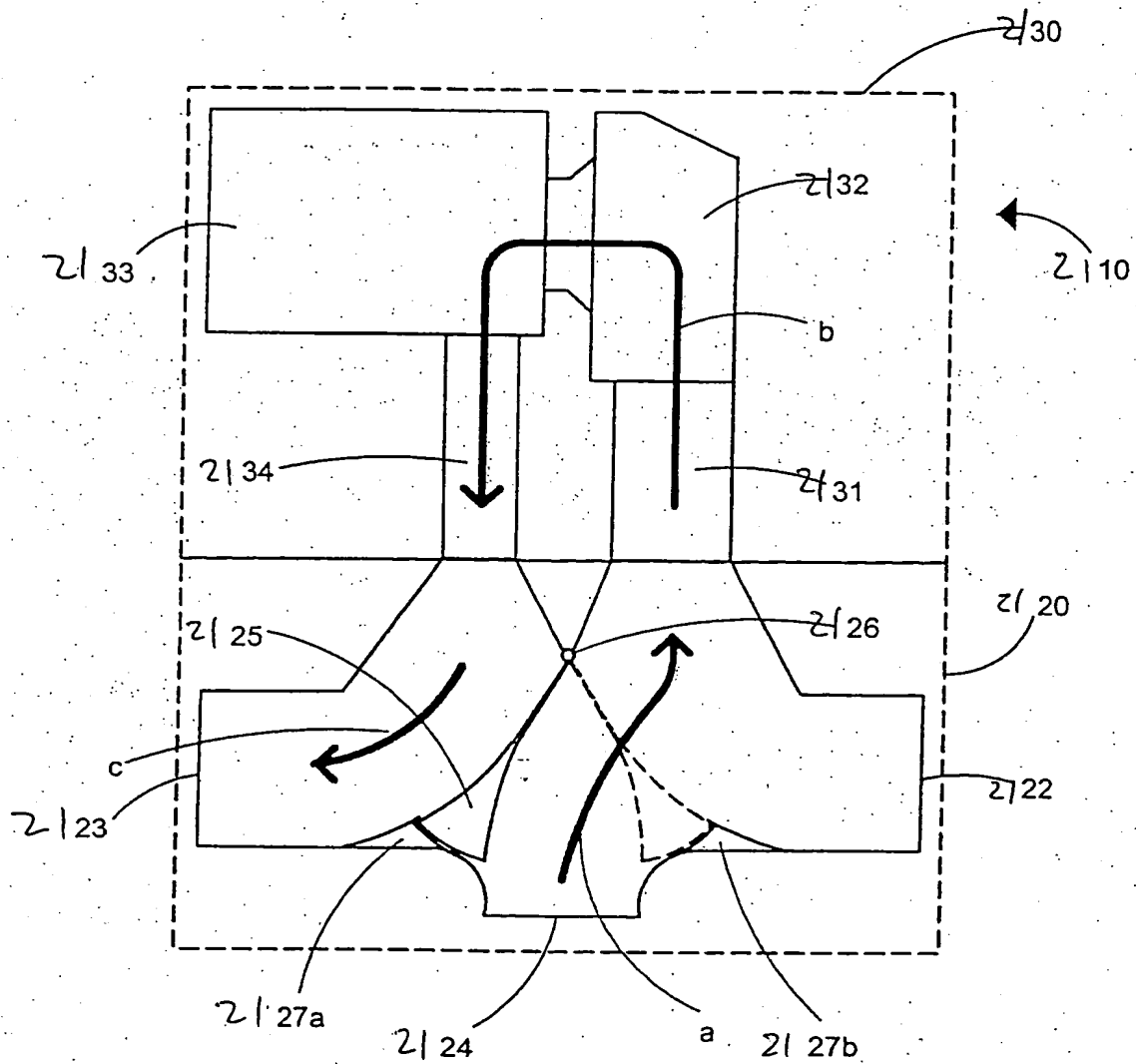


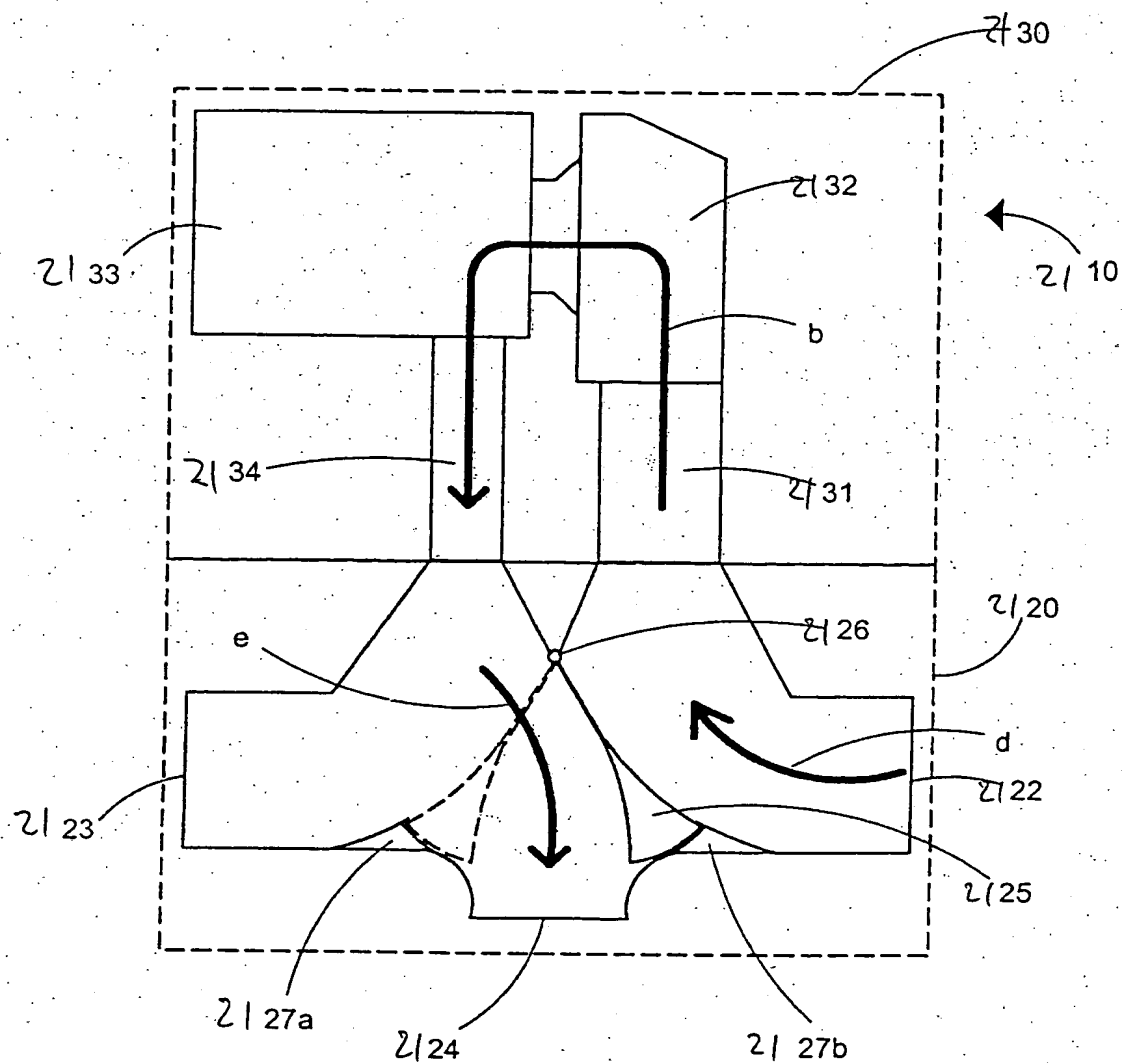
Fig. 20

PRIOR ART

Fig. 21



PRIOR ART



PRIOR ART

Fig. 23

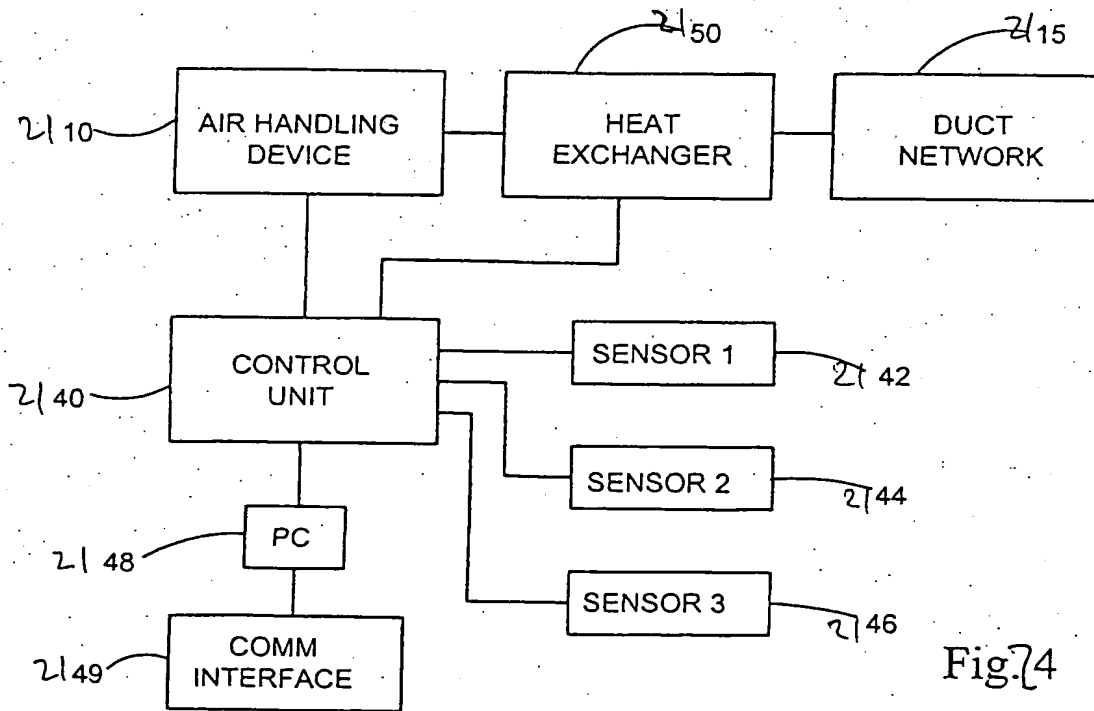
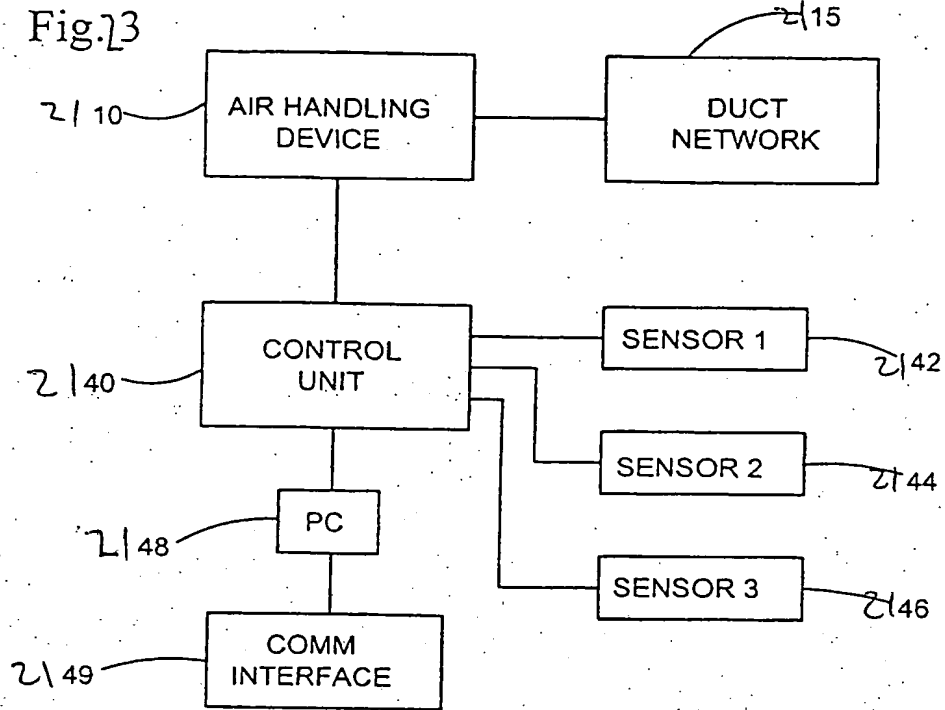


Fig. 24

PRIOR ART

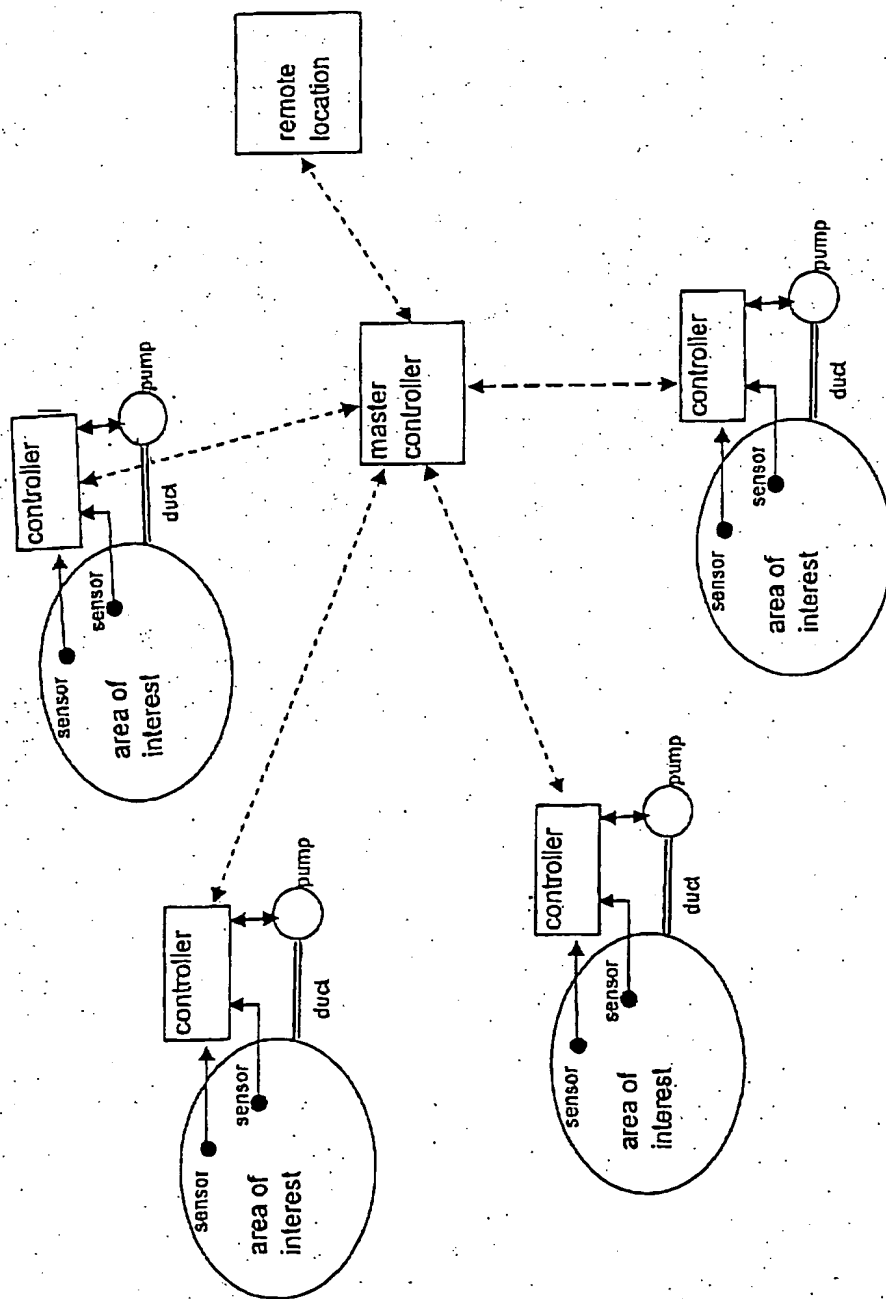


FIGURE 25

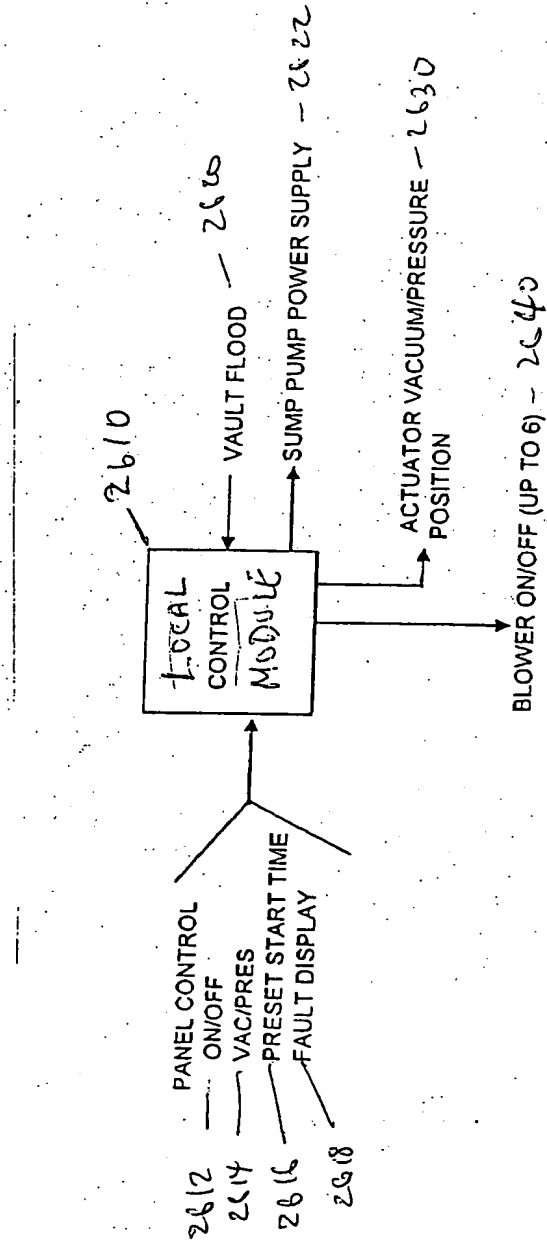


Fig. 26

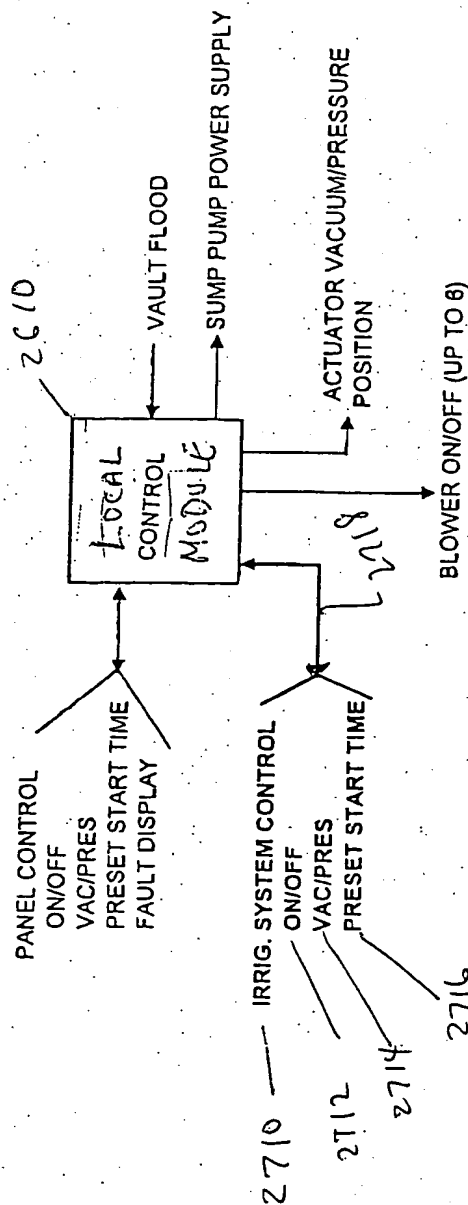


Fig. 27

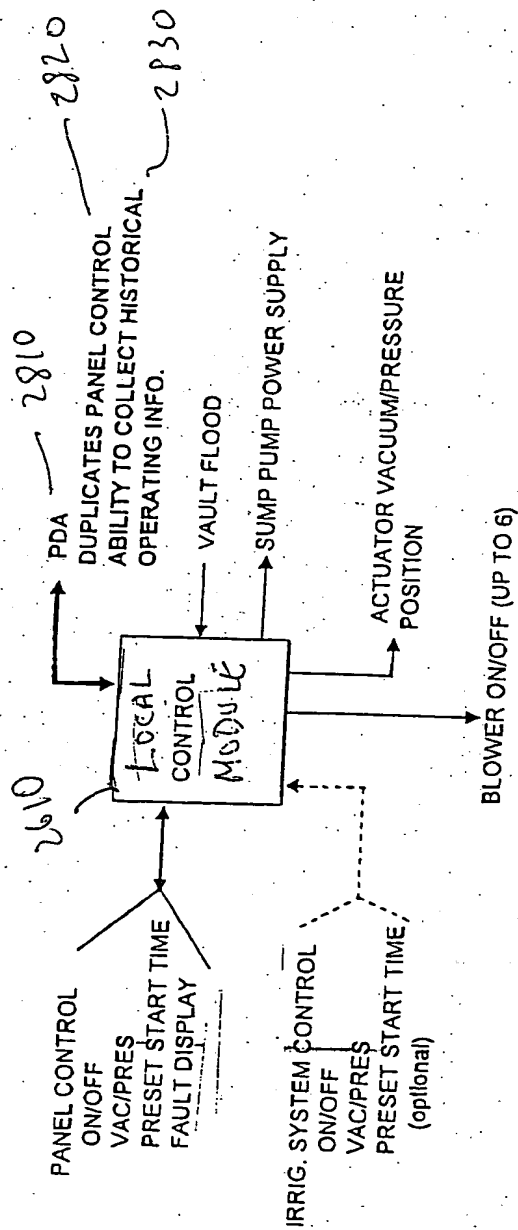


Fig. 28

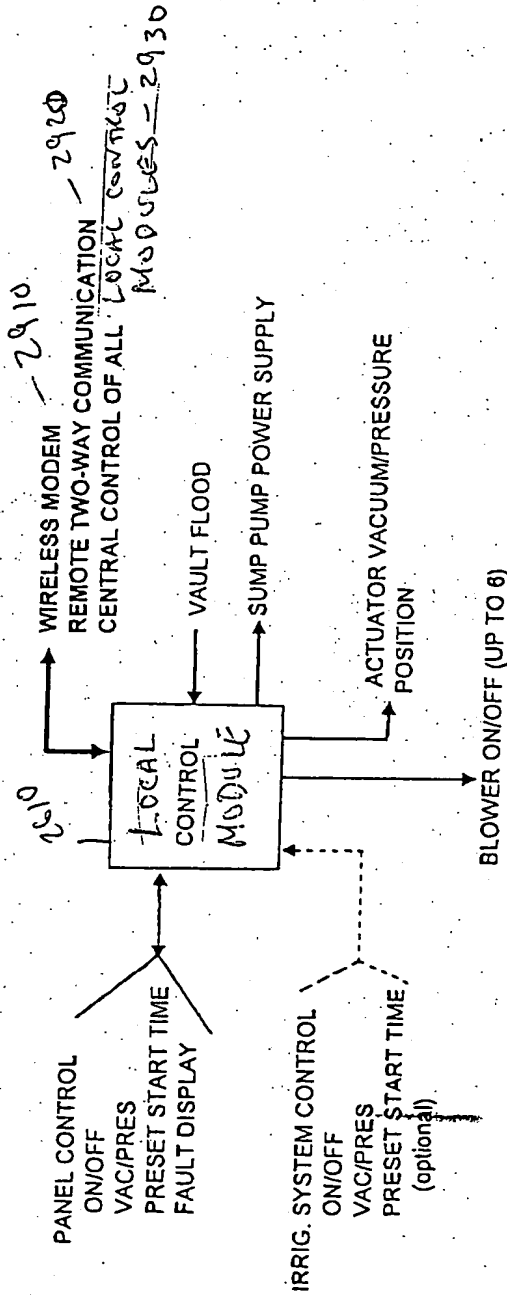


Fig. 29

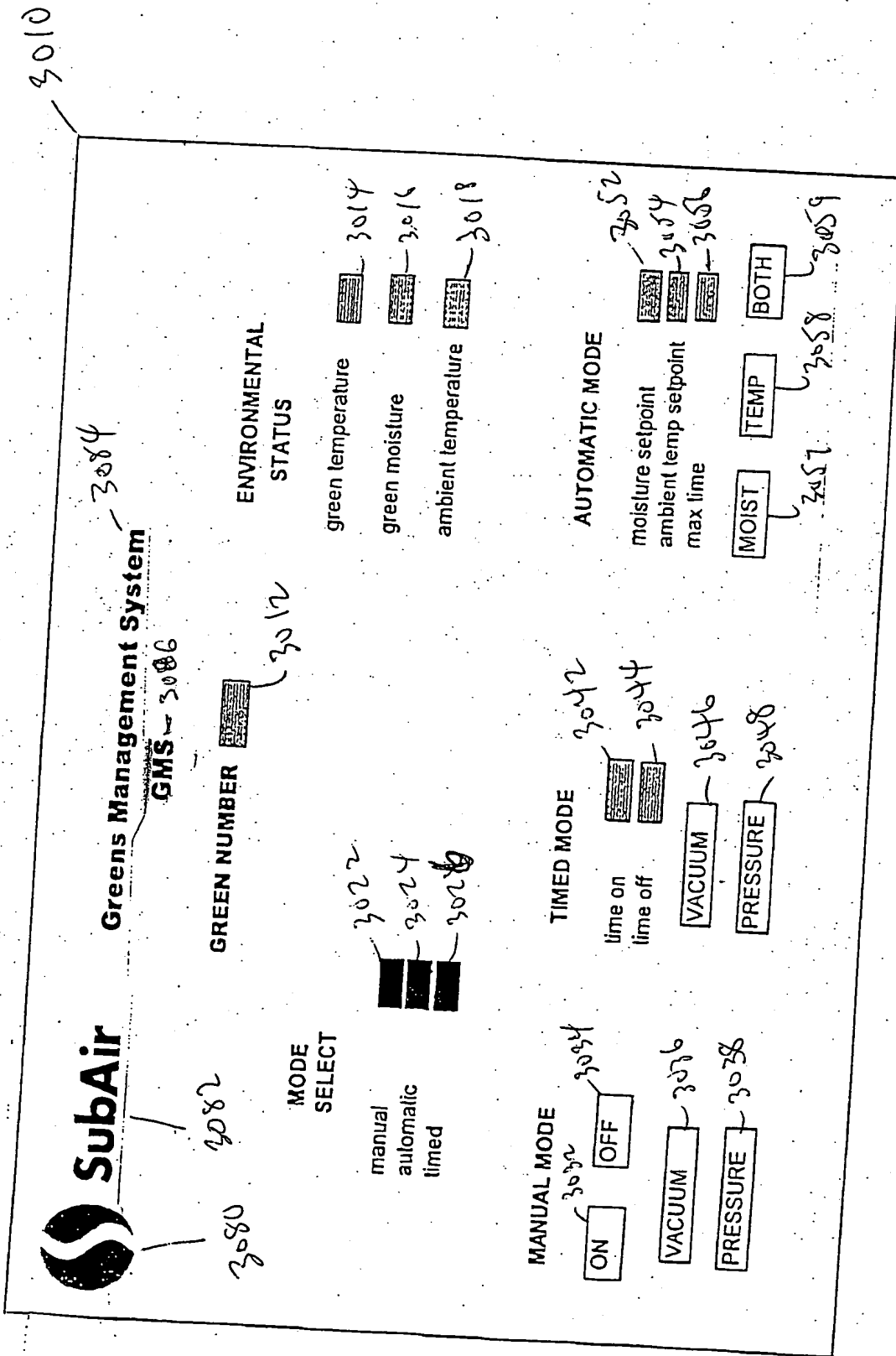
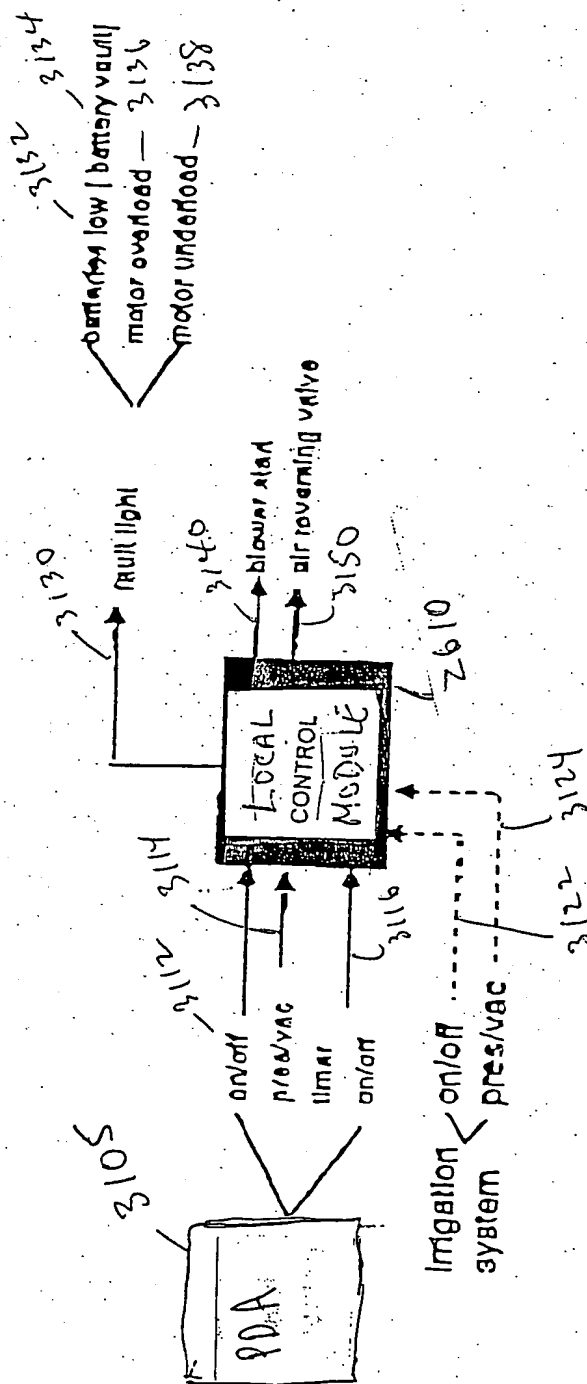


Fig. 30

Fig. 31



FEATURES

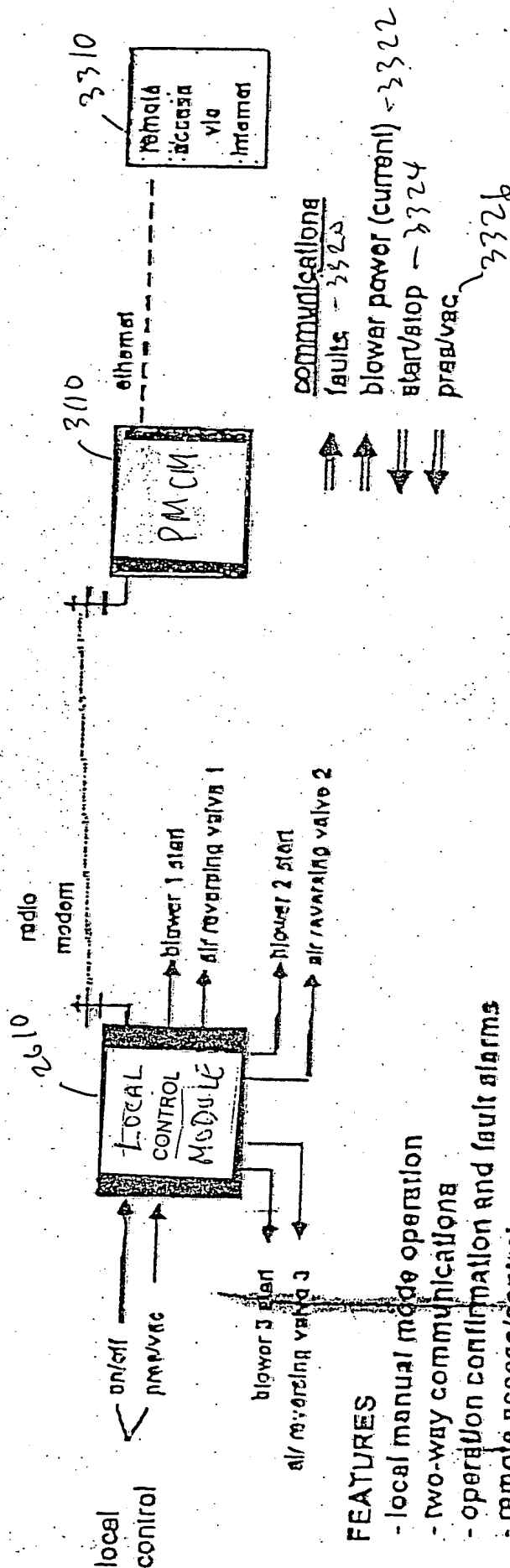
- local control via PDA
- local display of faults
- time of day programmable start/stop
- Auto start from Imm. System

Hand-drawn schematic diagram of a PNCM system. The diagram shows a central 'LCM' (Liquid Crystal Module) and a 'PNCM' (Polarized Nematic Crystal Module) connected by a cable. The LCM is labeled '3222 lumidity', '3224 green lamp', and '3226 green modulator'. It is also labeled '3228 ambient lamp' and '3234 ambient lamp'. The PNCM is labeled '3230 polar radiation' and '3232 air flow/pins'. A note at the bottom right says 'from multiple greens up to 500 n away'.

- auto control programs based on temp & moist
- data-logging & trend charting history

Fig. 32

Network Communications



FEATURES

- local manual mode operation
- two-way communications
- operation confirmation and fault alarms
- remote access/control
- time of day programmable start/stop

Fig. 33

Equipment Panel

local disconnect (used)
 transformer (if 480 v supply)
 motor contactor
 motor overloads
 current switch (contact close@ >2 amps)
 relays: motor start
 air reversing valve & actuator
 for one vault to two greens (double vault):
 diverter actuator - green A
 diverter actuator - green B
 panel door switch - on vacuum/ on pressure
 panel door fault lite (overload/underload/flooded vault)

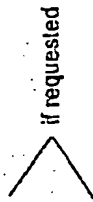
Field Devices

high pressure blower - 7.5 or 10 hp typically
 [230 single or 230/460 three phase]
 air reversing valve & actuator
 2 - diverter valves & actuators (if double vault)
 sump pump (if below ground)
 float switch (indicates flooded below-ground vault)
 moisture/temp sensor in green (if requested)
 ambient air temp sensor (if requested)

Communication & Control

Outputs to panel
 blower on
 air reversing valve to pressure position (at rest is vacuum)
 for one vault to two greens:
 open diverter valve to Green A
 open diverter valve to Green B

Inputs from panel & field devices
 motor overloads dropped out
 current <2 amps when running
 vault flooded
 green moisture
 green temp
 ambient temp



Logic requirements
 blower on based on - time of day
 blower on based on - temp &/or moisture (if requested)
 vacuum to green
 pressure to green
 green A &/or green B (if double vault)
 shut down/do not start if vault flooded

Fig. 3A